

Our Reference: AMI-158-B

PATENT

**GOALIE SKATE PROTECTIVE SHELL
WITH REMOVABLE BLADE**

CROSS-REFERENCE TO CO-PENDING APPLICATION

- [0001] This application claims the benefit of the priority date of co-pending provisional application Serial No. 60/223,517, filed August 7, 2000 in the names of Karl Van Blankenburg and Edward J. Belfour, the entire contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

- [0002] Hockey ice skates typically include a metal blade which is removably mounted in one-piece holder. The holder is, in turn, secured to the sole of a skate boot by means of a plurality of rivets, with rivets being commonly employed.
- [0003] While the holder is capable of securely fixing the blade to the boot, difficulties arise when the blade must be sharpened since the blade and bulky holder cannot be easily or quickly removed from the boot. This makes it difficult to manipulate or fixedly secure the entire skate in a blade sharpening machine for re-sharpening the blade edge.
- [0004] Goalie ice skates have a somewhat different construction in that a smaller height boot is mounted inside a plastic protective shell. The shell includes an integral holder for a blade which is insert molded in the shell. The shell is then riveted to the sole in the same manner as a regular hockey ice skate.
- [0005] Further, with goalie skates, removal of the blade when the blade is damaged, worn out, or otherwise requires replacement involves removal of all of the rivets attaching the holder to the skate boot. At best, this is a time consuming and costly process.
- [0006] It would be desirable to provide a goalie skate protective shell having a removable blade to overcome the aforementioned problems with prior art goalie skates; while at the same time providing the desired extra protection of a goalie's feet.

SUMMARY

- [0007] A goalie skate protective shell for receiving a goalie ice skate boot includes a protective shell having opposed sidewalls and a sole joined by toe and heel

portions. A holder is unitarily formed as part of the sole of the shell. The holder has an open ended groove extending lengthwise thereover. At least two transversely extending bores are formed in the holder. A blade has a blade edge and at least two legs projecting from the blade. Apertures are formed in the legs for alignment with the transverse extending bores in the holder when the blade is mounted in the open ended groove in the holder. Fasteners are engagable through the apertures in legs of the blade and the transversely extending bores in the holder to removably affix the blade to the holder.

[0008] The present goalie skate protective shell with removable blade overcomes deficiencies found in previous goalie ice skate protective shells. The holder which is integrally formed as a unitary part of the protective shell removably receives an ice skate blade which uniquely enables the blade to be removed for replacement, sharpening, etc. This makes the protective shell of the present invention easier to use than previously devised goalie skate protective shells.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The various features, advantages and other uses of the present invention will become more apparent by referring to the following detailed description and drawing in which:

[0010] FIG. 1 is an exploded perspective view of a goalie skate protective shell with replaceable blade according to the present invention;

[0011] FIG. 2 is an elevational view of the inner side of the assembled goalie skate protective shell and blade shown in FIG. 1;

[0012] FIG. 3 is a side elevational view of the outer side of the assembled goalie protective shell and blade of the present invention;

[0013] FIG. 4 is a side elevational view of the replaceable blade shown in FIGS. 1-3; and

[0014] FIG. 5 is a front end view of the goalie skate protective shell and replaceable blade according to the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

- [0015] Referring now to the drawing, and to FIGS. 1-5 in particular, there is depicted a goalie skate 10 having a protective shell with a replaceable blade 14 mounted therein.
- [0016] The shell 12 is formed as a one-piece body of a suitable hard plastic, such as polypropylene or polyethylene. The shell 12 includes opposed side walls including an outer side wall 20 and an inner side wall 22. The outer side wall extends between a toe cup 24 and a heel 26, with the toe cup 24 and the heel 26 joining opposed ends of the outer and inner side walls 20 and 22. The terms "outer" and "inner" are used with reference to the user's foot.
- [0017] The outer side wall 20 has a relatively low profile, at least in a center portion of the skate 10. This low profile is formed by an upper edge 28 which depends from an upper end at the heel 26 to a lower height side lip portion extending longitudinally along the length of the shell 12 before rising again and curving smoothly into the toe cup 24.
- [0018] The inner side wall 22 has a greater height with an ankle portion 30 rising above the upper extent of the heel 26 before the central edge 32 of the inner side wall 22 smoothly depends from the ankle portion 30 to the toe cup 24.
- [0019] A sole 18 is formed along a bottom surface of the shell 12 and is integrally joined to the side wall 20 and 22, the toe cup 24 and the heel 26. The overall dimensions of the sole 18 are chosen for each a particular size boot 16.
- [0020] A blade holder portion 32 is integrally joined to or molded with the sole 18 and depends from the sole 18. The holder portion 32 may take a variety of shapes; although all shapes of the holder portion 32 include a plurality of depending legs 34, 36, 38 and 40, by example only. The front most leg 34 located in the toe portion of the shell 12 and the rear most leg 40 located at the heel portion of the shell 12 are formed with through bores 42 to receive replaceable blade fasteners shown as a two-part fastener formed of fastener elements 44 and 46. The intermediate legs 36 and 38 of the holder 32 have internal slots 48 opening from a bottom edge of the holder 32, the purpose of which will also be described hereinafter.

- [0021] Finally, the bottom of the holder portion 32 is in the form of a continuous edge having an internal open-ended groove 50 extending there along between the leg 34 in toe portion of the shell 12 and the leg 40 in the heel 40 of the shell 12.
- [0022] As shown in FIG. 5, the side portions 52 and 54 of each leg 34, 36, 38 and 40 of the holder portion 32 taper inwardly from an upper end adjacent to the sole 18 to the groove 50.
- [0023] The legs 34, 36, 38 and 40 of the holder portion 32 form a plurality of weight reducing apertures therebetween, with three apertures 56, 58 and 60 being depicted by way of example only in FIG. 2.
- [0024] The blade 14 is preferably formed of a metal, such as steel. The blade 14, as shown in detail in FIGS. 1-5, includes a blade edge 64 and an opposed mounting edge 66 which is adapted to fit within the groove 50 in the holder portion 32. The mounting edge 66 may have a smooth continuous surface or an irregular surface with cut outs for reduced weight as shown by example only in FIGS. 1 and 4.
- A blade portion 68 is formed between the blade edge 64 and the mounting edge 66. The blade portion 68 extends between a toe edge 70 and a heel edge 72. Optionally, a plurality of identical or different shaped weight reducing apertures 74 are formed along the length of the blade portion 68.
- [0025] A front or toe leg 78 extends from the toe edge 70 as shown in FIG. 4. The outer profile of the toe leg 78 includes a notch 80 which is optionally provided by example only. Similarly, a heel leg 82 extends from the heel edge 72. An optional notch 84 may be formed in the outer surface of the heel leg 82 for weight reducing purposes.
- [0026] At least one and preferably a pair of lateral supports 86 and 88 are formed intermediately along the length of the blade portion 68 between the toe leg 76 and the heel leg 82. At least one aperture 90 is formed in each of the lateral supports 86 and 88 for weight reducing purposes. The lateral supports 86 and 88 fit snugly into the slots 48 formed in the legs 36 and 38 of the holder 32 to provide lateral support for the blade 14.

[0027] The blade 14 is removably attachable to the holder portion 32 by means of the aforementioned fasteners 44 and 46 which are extendable through the bores 42 formed in an upper end of the toe leg 76 and the heel leg 82. The toe leg 76 and the heel leg 82 slide within open ended grooves 77 and 83 formed on the legs 34 and 40 of the holder portion 32 such that the apertures 92 and 94 align with the bores 42 in the legs 34 and 40 for receiving the fasteners elements 44 and 46 there through.

[0028] The frontmost aperture 56 in the holder portion 32 is formed with a rearward facing projection 98. The projection 98 enables the goalie to fit the front toe strap 99 of the leg pads in place over the projection 98 to stop the leg pads from twisting during use.

[0029] In use, the shell 12 receives a conventional goalie skate boot 16 therein. At a number of peripheral locations 100, a plurality of rivets or screws pass through the sole 18 of the shell 12 into the sole of the boot 16 to secure the boot 16 and shell 12 together. This enables a goalie to exhibit unitary movement between his legs, the boots 16 and the shell 12 mounted on each boot 16.

[0030] Other features of the present invention may be more clearly seen in FIGS. 2 and 3. As shown therein, the rearmost aperture 60 in the holder portion 32 is formed with at least one angled edge 96. The edge 96 is specifically formed to accommodate the correct orientation of the lower attaching strap 97 of a goalie's leg pad. The edge 96 allows the leg pad strap to lie flat across the holder 32 without twisting.

[0031] The intermediate mounting edge 66 of the blade portion 68 of the blade 14 extends into the groove 50 in the holder 32 to laterally support the blade 14 from lateral movement relative to the holder 32. The lateral supports 86 and 88 assist in such lateral support.

If at any time, the blade 14 needs to be re-sharpened since it has become dull, the fastener elements 44 and 46 are un-threaded to enable the blade 14 to be separated from the shell 12. This enables the blade 14 to be easily and stationally mounted in a conventional blade sharpening machine, not shown, to re-sharpen the edge 64 on the blade 14.

- [0032] Alternately, damaged or dull blades 14 can be easily and quickly removed and replaced by new, sharp blades in the limited amount of time between periods in a conventional hockey game.
- [0033] The replaceable blades 14 can also be interchanged with different blades more suited for different ice conditions. Soft ice require blades that are duller; while hard ice needs sharp blades for optimum skating performance.
- [0034] After the blades 14 have worn down as a result of multiple sharpenings over time, the blades 14 can be easily removed and replaced with new blades without having to remove the shell 12 from the boot 16.
- [0035] In summary, there has been disclosed a unique goalie skate with includes a protective shell having a removable blade mounted thereon.